Developing a Tool to Measure and Improve the Safety Culture of Canada’s Railway Industry

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PROJECT TEAM

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• Claude Allard, Transport Canada, Rail Safety
• Sam Berrada, CN
• Lorrie Johnston, New Brunswick Southern Railway
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• Mike Lowenger, Railway Association of Canada
• Keith Shearer, CP Rail
• Jean Tierney, VIA Rail
OUTLINE

• Background
• Scope of project
• Results
• Conclusions
• Discussion questions
PROJECT BACKGROUND

• Project originates from Railway Safety Act (RSA) Review completed in 2007

• SMS Recommendations state:
  – must take specific measures to attain an effective safety culture (#18)
  – develop tools to measure safety culture (#24)
PROJECT BACKGROUND

• Following RSA Review, TC worked with industry and unions to create a safety culture definition and framework and a perception survey
PROJECT BACKGROUND

Definition
“The safety culture of an organization is the result of individual and group values, attitudes, perceptions, competencies and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization’s health and safety management system (SMS).”

Framework
- A - Leadership and Commitment to Safety Culture
- B - Two-way Communication
- C - Stakeholder Employee / Employee Representative Involvement
- D - Learning Culture
- E - Establishment of a ‘Just’ Culture
PROJECT OBJECTIVE

• TC awarded a contract to Safety Science Management Consulting (SSMC) in December 2011 to:
  – provide, validate and field test an effective and efficient safety culture measurement tool.
SCOPE

• Review of:
  – research on safety culture
  – existing safety culture measurement tools
• Evaluation of existing tools
• Development of an enhanced safety culture perception survey
• Implementation of a validation pilot test plan
RESULTS OF RESEARCH REVIEW

– Interpretations and approaches to measure vary
– Safety culture measurement should be based on an organization’s safety policy or safety culture framework
– Measurement tools need to be practical
– Leadership is essential
– Organization wide measurement is required
– Safety culture maturity models and frameworks are effective for improvement
THE MATURITY MODEL

Pathological
- Complies with minimum safety standards
- Cost of Doing business
- Short term perspective

Complies with current standards
Inspection and audit processes
Compliance alone = safety

Reactive
- Safety as risk management
- Identifies potential for hazards beforehand
- System audits

Calculative
- Views safety as an opportunity
- Safety part of decision making
- Long term outlook

Proactive
- Safety fully integrated into business practice
- Safety is reflected in core values
- Regulators role is to monitor

Generative

Identifies potential for hazards beforehand
System audits
Compliance alone = safety

Cost of Doing business
Short term perspective

Complies with current standards
Inspection and audit processes
Compliance alone = safety

Views safety as an opportunity
Safety part of decision making
Long term outlook

Safety fully integrated into business practice
Safety is reflected in core values
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Identifies potential for hazards beforehand
System audits
Compliance alone = safety

Cost of Doing business
Short term perspective
RESULTS OF TOOL REVIEW

– Very few transportation tools, only 1 for rail
  • Parallel project in Australia to validate this tool
– Significant barriers to use (license fees and data ownership)
– No data on tools effectiveness or results available
RESULTS OF TOOL EVALUATION

– Poor alignment with current definition and framework
– Custom created by the organizations using them
– Lack of a comprehensive approach (e.g.: a process combining surveys, interviews, and workshops)
– Little guidance on analysis or results
– Ownership of collected data
RESULTS OF TOOL EVALUATION

– RSSB/RISSB (19%),
– Loughborough (14%),
– HSE UK Laboratory (10%),
– Keil Centre (3%)
– EuroControl Safety Culture Toolbox (3%)
– Transport Canada survey (-6%)
– Lowest rated (-49%)
DEVELOPING AN ENHANCED PERCEPTION SURVEY

- Enhance the existing Transport Canada perception
- Target surveys for ‘management’, ‘supervision’ and ‘tradespersons’
- Prepare supporting tools
- Design a pilot test to validate the survey in the field.
ENHANCED PERCEPTION SURVEY

Transport Canada Safety Culture Perception Survey (revised survey)

The purpose of this questionnaire is to get an understanding of perceptions about safety within [INSERT YOUR ORGANIZATION]. Each questionnaire is confidential and we ask that you answer each question honestly.

Position:  □ Manager  □ Supervisor  □ Tradesperson

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
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</thead>
<tbody>
<tr>
<td>1. Has your immediate supervisor recognized safe actions?</td>
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<td>2. Senior Managers visibly demonstrate a commitment to safety.</td>
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<td>3. Safety is not a priority for my supervisor.</td>
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<td>4. I don’t think my immediate boss does enough to ensure a safe working environment</td>
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<td>5. Senior managers talk to me about safety.</td>
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<td>6. Management readily acts upon safety suggestions from staff.</td>
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<td>7. Management sometimes turn a blind eye when safety procedures/instructions/rules are broken</td>
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<td>8. Managers respond positively when I raise health and safety issues.</td>
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<td>9. There is a low level of trust between management and frontline staff.</td>
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<td>10. Senior managers are rarely seen by the workforce.</td>
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<td>11. Managers and employees communicate freely on safety issues.</td>
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<td>12. The company does a good job of keeping employees informed about matters that affect safety.</td>
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<td>13. There is good feedback on reported safety issues.</td>
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<td>14. There are good communications here about safety issues.</td>
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<td>15. Discussions about safety at the briefings/meetings I attend are frank and open.</td>
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<td>16. People are not shut down for reporting information that might stop operations.</td>
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<td>17. There is prompt feedback on reported workplace health and safety issues.</td>
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<td>18. Employees are encouraged to remind each other to work safely.</td>
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<td>19. Employees feel comfortable discussing what they feel are the underlying causes and circumstances of an accident</td>
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<td>20. Employees are encouraged to provide input/comments on safety during safety briefings/meetings and other events.</td>
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<td>21. My workmates would take appropriate action if they saw rules being broken.</td>
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</table>
GUIDANCE DOCUMENT

Administration Guidance Manual

The following is the proposed outline of the Guide to Implementing the Transport Canada Safety Culture Perception Survey. The outline would also be reflected in the power-point presentation once the manual is complete.

1.0 Introduction (1 page)
   - Background on safety culture
   - Scope
   - Qualitative and quantitative methods – Reliability
   - Advantages / Limitations

2.0 Approach to Survey (1 page)
   - Approach
   - Roles & Responsibilities of Assessment Team
   - Confidentiality
   - Method (survey distribution, collection etc.)
   - Interviews / Workshops
   - Organizational readiness

3.0 Analysis (1 page)
   - Approaches
   - Overall Assessment
   - Comparisons
   - Validation
   - Trending

4.0 Report (1/2 page)
   - Reporting
   - Overall Report
   - Feedback and Participation

5.0 Improvement (1 page)
   - Corrective actions
   - Workforce involvement
   - Sustainment

Appendix
   A1 – Transport Canada Safety Culture Definition, Elements and Practices
   A3 – Key References
   A4 - Useful Links
TABULATION OF RESULTS

**Element 1: Leadership & Commitment**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
<th>Question 5</th>
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<td>193</td>
<td>193</td>
<td>243</td>
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</tbody>
</table>

**Questions and Comments**

- **Question 10**: Senior managers are rarely seen by the workforce.
- **Question 9**: There is a low level of trust between management and employees.
- **Question 8**: Managers respond positively when I raise health and safety concerns.
- **Question 6**: Management readily acts upon safety recommendations.
- **Question 2**: Senior Managers visibly demonstrate a commitment to safety.
- **Question 3**: Safety is not a priority for my supervisor.
- **Question 5**: Senior managers talk to me about safety.
LESSONS LEARNED FROM PILOT

• Questions needs to be clear and simple
• Timeliness and transparency of execution is essential
• Using additional data collection (interviews and workshops) methods for result analysis and improvement plan is necessary
CONCLUSION / NEXT STEPS

• Build out practices and elements to support measurement with evidence
• Support interview and workshop approaches, in addition to a survey
• Timely turnaround of survey results
• Cross analysis tools and techniques
• Improvement based on a continuous cycle and open discussion
DISCUSSION QUESTIONS

What are the key success factors in measuring safety culture?
DISCUSSION QUESTIONS

What are your experiences with safety culture assessments?
DISCUSSION QUESTIONS

Is it possible (or useful) to support measuring culture perception (subjective) with evidence (objective)?
DISCUSSION QUESTIONS

Is collecting evidence of culture realistic?
DISCUSSION QUESTIONS

Are organizations suffering from survey fatigue?
DISCUSSION QUESTIONS

Are employees reluctant to honestly report on safety issues?
DISCUSSION QUESTIONS

Are employees willing to provide demographic information on surveys?
DISCUSSION QUESTIONS

*How can we go from safety culture measurement to improvement? Is it doable and practical?*
Questions?

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